

WHAT IS CLAIMED IS:

1. A lean burn engine control system, comprising:
 - a throttle valve for controlling the intake air quantity of an engine;
 - a power lever for turning the throttle valve;
 - means for detecting the manipulated variable of the power lever;
 - means for determining the degree of leaning of an air-fuel mixture according to the detected manipulated variable; and
 - means for controlling the air-fuel ratio of the mixture so that the mixture becomes lean according to the determined degree of the leaning, wherein:
 - a range in which the power lever is operated is secured up to a range beyond the full throttle position of the throttle valve;
 - in the operational range beyond the full throttle position, the throttle valve is kept at a full throttle state; and
 - only the detected manipulated variable varies.
2. The lean burn engine control system according to claim 1, wherein:
 - in the operational range beyond the full throttle position, the degree of the leaning is decreased according to the manipulated variable.
3. The lean burn engine control system according to claim 1, further comprising:
 - means for determining whether the engine is warmed up or not; and

means for controlling the degree of the leaning based upon the result of the determination.

4. The lean burn engine control system according to claim 2, further comprising:

means for determining whether the engine is warmed up or not; and

means for controlling the degree of the leaning based upon the result of the determination.

5. The lean burn engine control system according to claim 1, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

6. The lean burn engine control system according to claim 2, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

7. The lean burn engine control system according to claim 3, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

8. The lean burn engine control system according to claim 1, and further including a push-pull member operatively connected to the power lever for imparting movement to the power lever for adjusting the throttle valve.

9. The lean burn engine control system according to claim 8, wherein the means for detecting the manipulated variable of the power lever is a positional sensor including a driven gear operatively connected to a throttle gear for detecting the manipulated variable of the power lever by detecting a turning angle of the driven gear.

10. The lean burn engine control system according to claim 9, and further including a lost motion mechanism operatively connected to the throttle gear for compensating for movement of the push-pull member beyond a full throttle position.

11. A lean burn engine control system, comprising:

a throttle valve for controlling the intake air quantity of an engine;

a power lever operatively connected to the throttle valve for turning the throttle valve;

detecting means for detecting the manipulated variable of the power lever;

determining means for determining the degree of leaning of an air-fuel mixture according to the detected manipulated variable; and

control means for controlling the air-fuel ratio of the mixture so that the mixture becomes lean according to the determined degree of the leaning;

wherein a range in which the power lever is operated is secured up to a range beyond the full throttle position of the throttle valve and in the operational range, beyond the full throttle position, the throttle valve is kept at a full throttle state and only the detected manipulated variable varies.

12. The lean burn engine control system according to claim 11, wherein:

in the operational range beyond the full throttle position, the degree of the leaning is decreased according to the manipulated variable.

13. The lean burn engine control system according to claim 11, further comprising:

means for determining a temperature of an engine; and

means for controlling the degree of the leaning based upon the temperature of

an engine.

14. The lean burn engine control system according to claim 12, further comprising:

means for determining a temperature of an engine; and

means for controlling the degree of the leaning based upon the temperature of an engine.

15. The lean burn engine control system according to claim 11, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

16. The lean burn engine control system according to claim 12, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second

correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

17. The lean burn engine control system according to claim 13, comprising:

means for acquiring reference ignition timing based upon engine speed;

means for acquiring a first correction amount related to ignition timing based upon the load of an engine;

means for acquiring a second correction amount related to ignition timing based upon an air-fuel ratio according to the degree of the leaning;

means for correcting the reference ignition timing by the first and second correction amounts; and

means for controlling the ignition of the engine at the corrected ignition timing.

18. The lean burn engine control system according to claim 11, and further including a push-pull member operatively connected to the power lever for imparting movement to the power lever for adjusting the throttle valve.

19. The lean burn engine control system according to claim 18, wherein the means for detecting the manipulated variable of the power lever is a positional sensor including a driven gear operatively connected to a throttle gear for detecting the manipulated variable of the power lever by detecting a turning angle of the driven gear.

20. The lean burn engine control system according to claim 19, and further including a lost motion mechanism operatively connected to the throttle gear for compensating for movement of the push-pull member beyond a full throttle position.